

wxWidgets library

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1. Introduction

As stated on the official site (see references).

wxWidgets is a C++ library that lets developers create applications for Windows, macOS, Linux and other platforms with a single code base.

wxWidgets is a programmer’s toolkit for writing desktop or mobile applications with graphical user interfaces (GUIs).

It has popular language bindings for *Python*, *Perl*, *Ruby* and many other languages, and unlike other cross-platform toolkits, wxWidgets gives applications a truly native look and feel because it uses the platform’s native API rather than emulating the GUI.

wxWidgets provides classes for files and streams, multiple threads, application settings, interprocess communication, online help, database access, and much more.

1.1. Last tested version

| | |
|------------------------|-------------------|
| Latest Stable Release: | 3.2.2.1 |
| Released: | February 13, 2023 |
| API Stable Since: | July 7, 2022 |

1.2. References

[Main Site](#)

[Documentation](#)

[Wiki](#)

1.2.1. Books

Cross-Platform GUI Programming with wxWidgets

by Julian Smart and Kevin Hock with Stefan Csomor

Prentice Hall

2006 Pearson Education

2. Cookbook

2.1. Installation and Build

2.1.1. Windows + Visual Studio

I am going to test and document the installation and the build of a solution based on different documentation found on site.

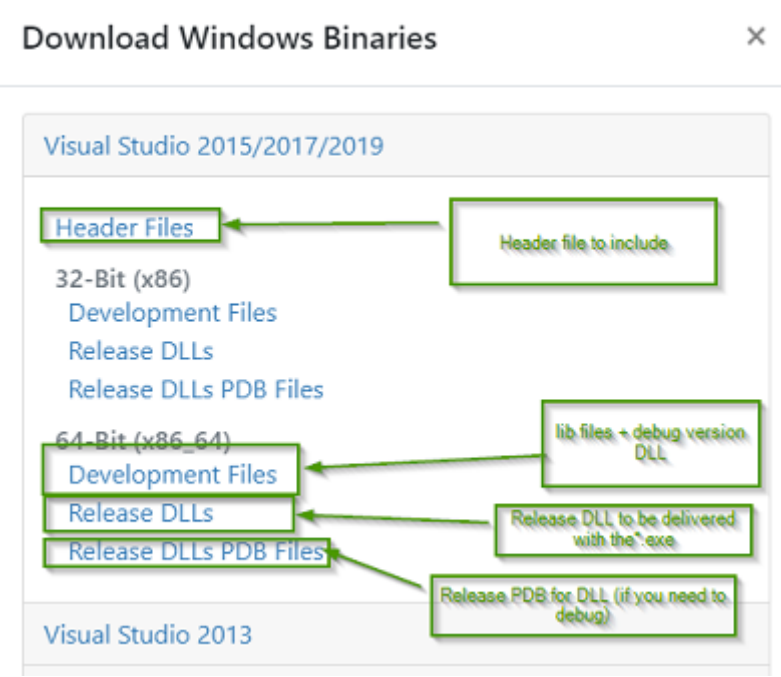
I’ll use the development version 3.1.5.

1. Get the binaries, sources and header files.

If you are using one of the supported compiler, like Visual Studio C++ compiler, you can use **the prebuild binaries**.

https://docs.wxwidgets.org/trunk/plat_msw_binaries.html

The binaries are available at: https://www.wxwidgets.org/downloads#v3.1.5_msw



| | |
|-------------------------------------|---|
| wxMSW-3.1.5_vc14x_x64_Dev.7z | Development files, libs, debug DLL, wxwidgets.props file |
| wxWidgets-3.1.5-headers.7z | Header files |
| wxMSW-3.1.5_vc14x_x64_ReleaseDLL.7z | Release dlls |
| wxMSW-3.1.5_vc14x_x64_ReleasePDB.7z | Release PDBs |
| wxWidgets-3.1.5.zip | Archived sources |

2. Unzip the header files and the lib

- Create the folder for lib and includes :

D:\ccp_vhdd_app\wxWidgets

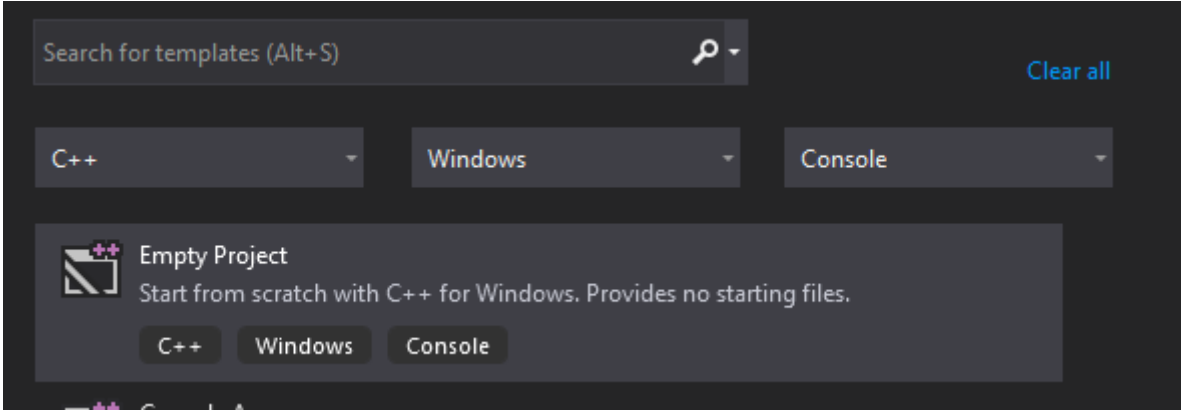
- Create environment variable **WXWIN** that point to the lib + header folder
- Unzip wxMSW-3.1.5_vc14x_x64_Dev.7z + wxWidgets-3.1.5-headers.7z to \$WXWIN folder

The resulted structure is :

| Name | D |
|-----------------|---|
| build | 1 |
| include | 1 |
| lib | 1 |
| wxwidgets.props | 1 |

3. Using wxWidges with Visual Studio

- Create a new empty C++ solution



- Add the following program to solution. Program get from https://docs.wxwidgets.org/3.0.5/overview_helloworld.html

```
// The program has been copied from wxWidgets site
// https://docs.wxwidgets.org/3.0.5/overview_helloworld.html

// wxWidgets "Hello world" Program
// For compilers that support precompilation, includes "wx/wx.h".

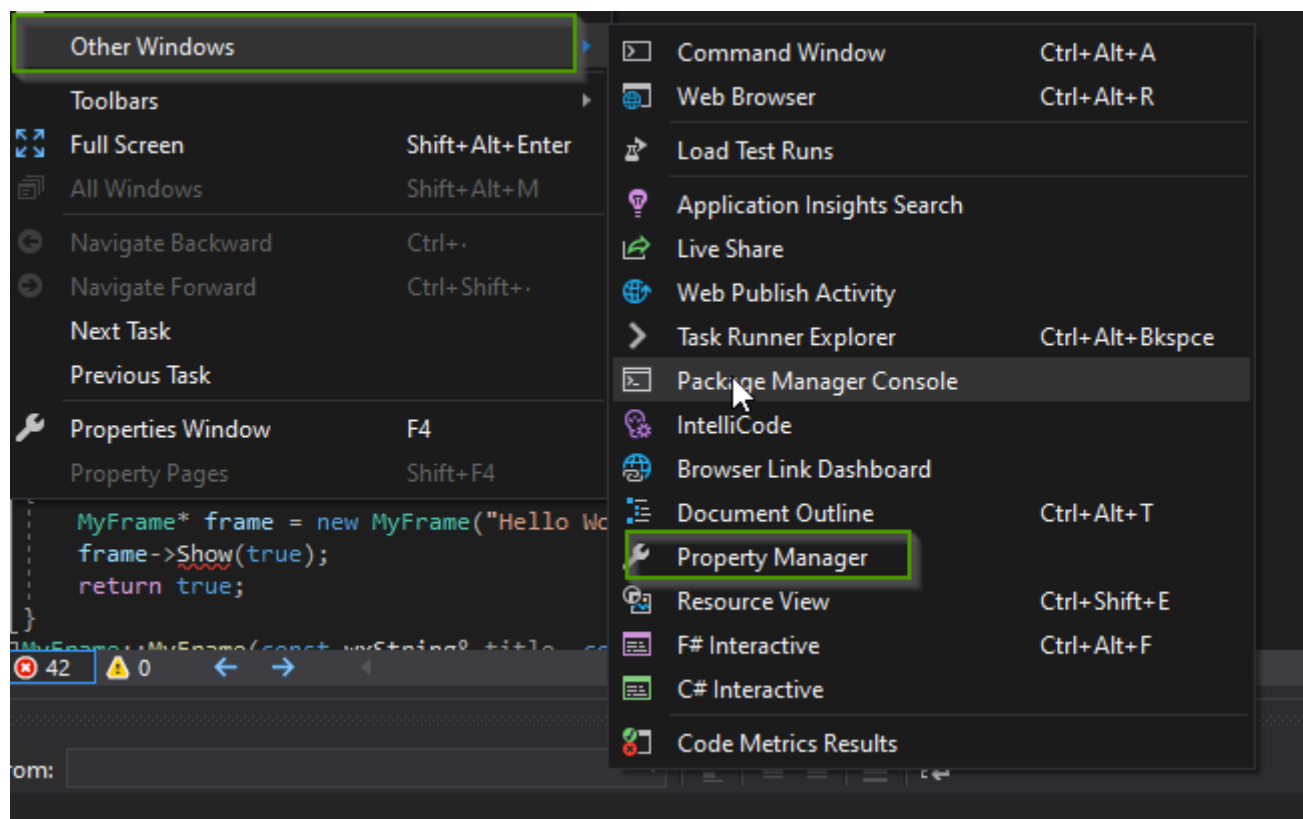
#include <wx/wxprec.h>
```

```

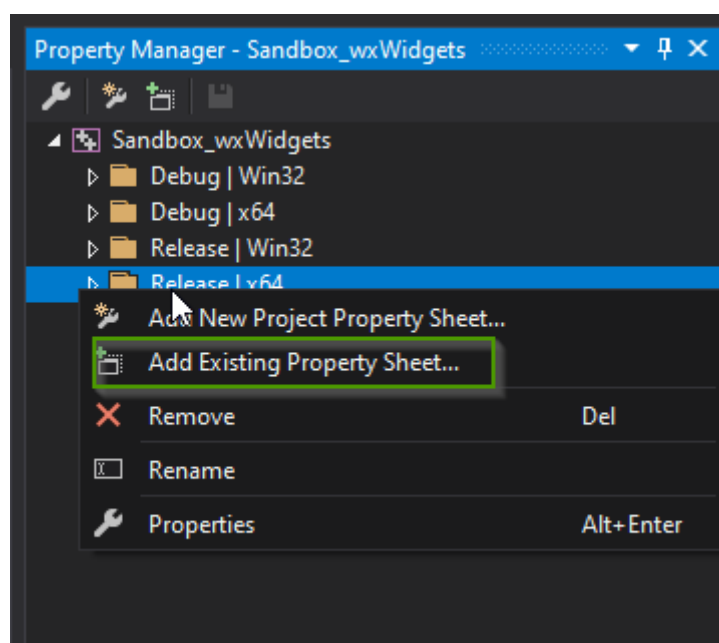
#ifndef WX_PRECOMP
#include <wx/wx.h>
#endif
class MyApp : public wxApp
{
public:
    virtual bool OnInit();
};
class MyFrame : public wxFrame
{
public:
    MyFrame(const wxString& title, const wxPoint& pos, const wxSize& size);
private:
    void OnHello(wxCommandEvent& event);
    void OnExit(wxCommandEvent& event);
    void OnAbout(wxCommandEvent& event);
    wxDECLARE_EVENT_TABLE();
};
enum
{
    ID_Hello = 1
};
wxBEGIN_EVENT_TABLE(MyFrame, wxFrame)
EVT_MENU(ID_Hello, MyFrame::OnHello)
EVT_MENU(wxID_EXIT, MyFrame::OnExit)
EVT_MENU(wxID_ABOUT, MyFrame::OnAbout)
wxEND_EVENT_TABLE()
wxIMPLEMENT_APP(MyApp);
bool MyApp::OnInit()
{
    MyFrame* frame = new MyFrame("Hello World", wxPoint(50, 50), wxSize(450, 340));
    frame->Show(true);
    return true;
}
MyFrame::MyFrame(const wxString& title, const wxPoint& pos, const wxSize& size)
    : wxFrame(NULL, wxID_ANY, title, pos, size)
{
    wxMenu* menuFile = new wxMenu;
    menuFile->Append(ID_Hello, "&Hello...\tCtrl-H",
        "Help string shown in status bar for this menu item");
    menuFile->AppendSeparator();
    menuFile->Append(wxID_EXIT);
    wxMenu* menuHelp = new wxMenu;
    menuHelp->Append(wxID_ABOUT);
    wxMenuBar* menuBar = new wxMenuBar;
    menuBar->Append(menuFile, "&File");
    menuBar->Append(menuHelp, "&Help");
    SetMenuBar(menuBar);
    CreateStatusBar();
    SetStatusText("Welcome to wxWidgets!");
}
void MyFrame::OnExit(wxCommandEvent& event)
{
    Close(true);
}
void MyFrame::OnAbout(wxCommandEvent& event)
{
    wxMessageBox("This is a wxWidgets' Hello world sample",
        "About Hello World", wxOK | wxICON_INFORMATION);
}
void MyFrame::OnHello(wxCommandEvent& event)
{
    wxLogMessage("Hello world from wxWidgets!");
}

```

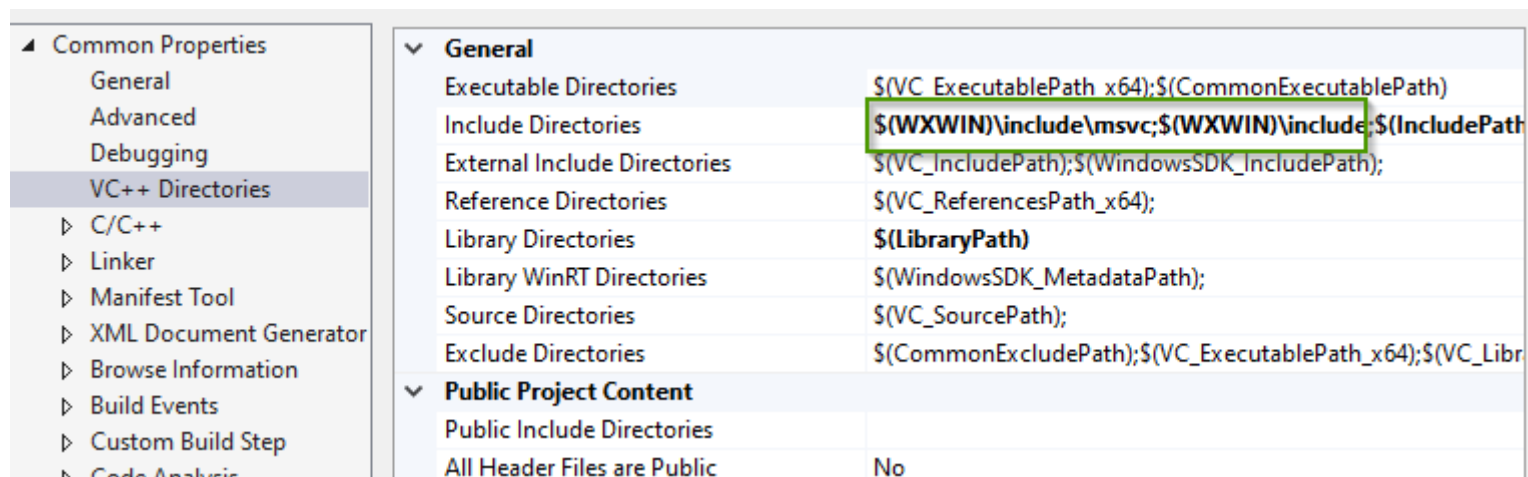
- Set the project to use the wxWidgets files. For this include the file **wxwidgets.props** as property sheet for the project.
 - Select View/Other windows



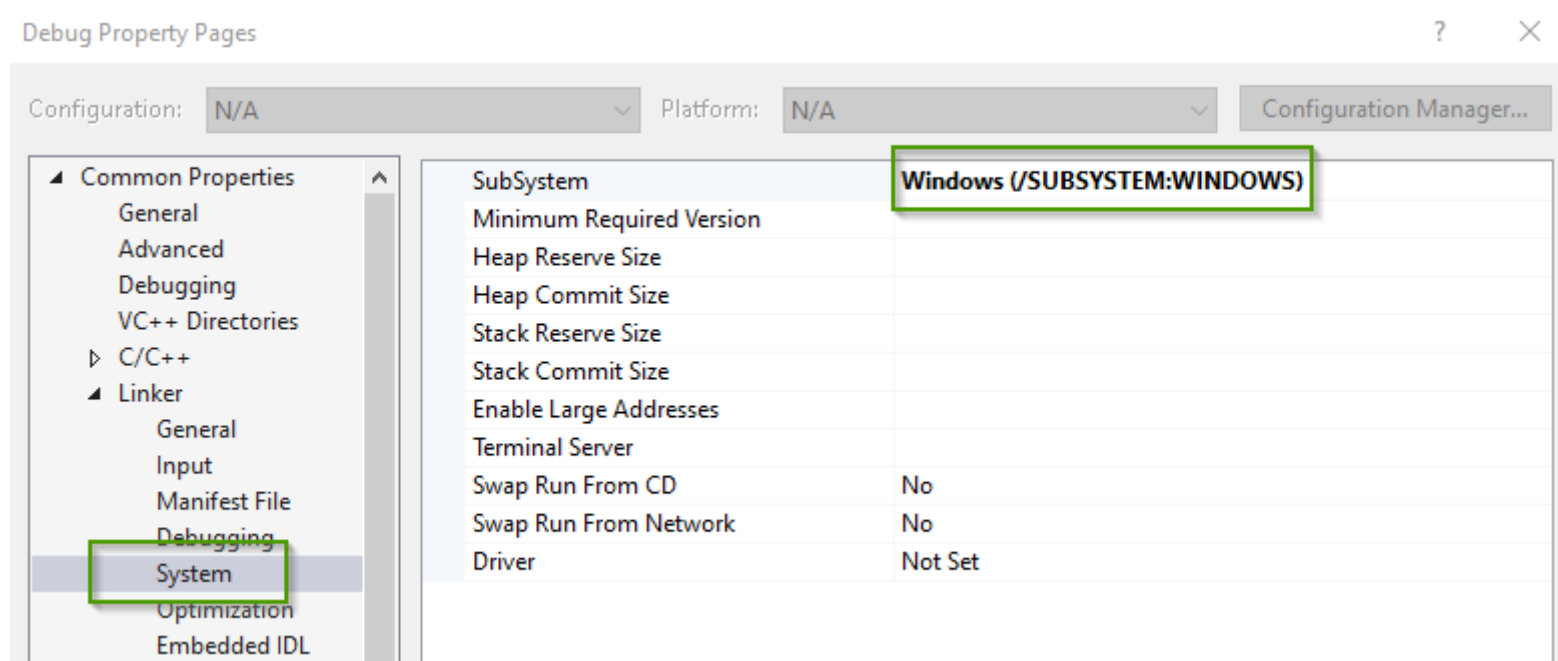
- For each configuration that you will use right click and select



- Add `$(WXWIN)\include\msvc;$(WXWIN)\include` to compiler folder

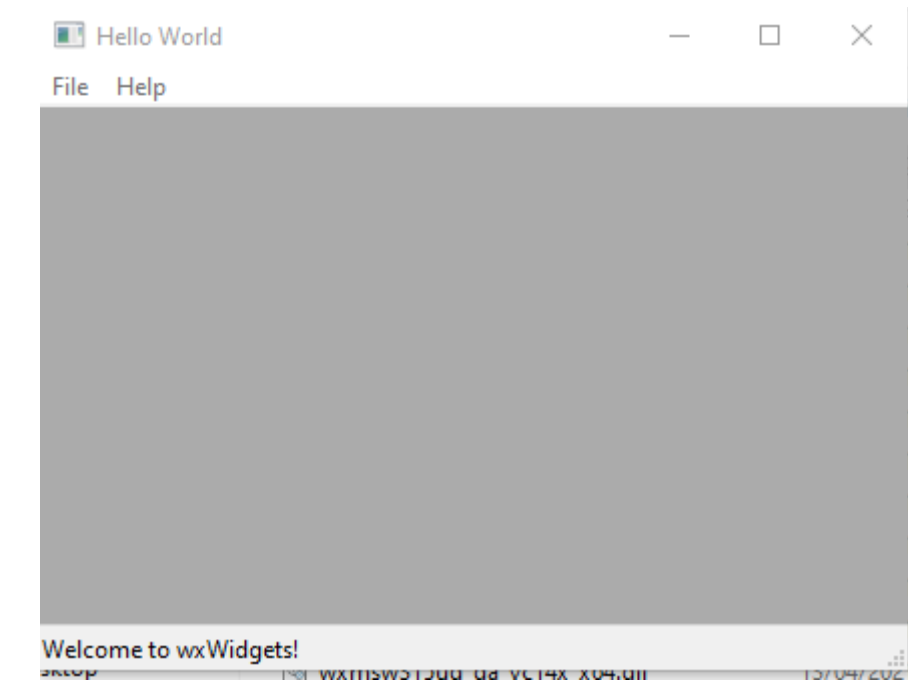


- Set Windows (/SUBSYSTEM:WINDOWS) for linker



4. Build and run project

Here it is the "Hello World" application:



Note: To run the application needs the DLLs (release or debug).

- Release

| Name | Date modified | Type | Size |
|----------------------------------|------------------|----------------------|----------|
| wxbase315u_net_vc14x_x64.dll | 13/04/2021 13:00 | Application exten... | 266 KB |
| wxbase315u_vc14x_x64.dll | 13/04/2021 12:59 | Application exten... | 2,707 KB |
| wxbase315u_xml_vc14x_x64.dll | 13/04/2021 13:05 | Application exten... | 178 KB |
| wxmsw315u_adv_vc14x_x64.dll | 13/04/2021 13:04 | Application exten... | 11 KB |
| wxmsw315u_aui_vc14x_x64.dll | 13/04/2021 13:06 | Application exten... | 628 KB |
| wxmsw315u_core_vc14x_x64.dll | 13/04/2021 13:04 | Application exten... | 8,269 KB |
| wxmsw315u_gl_vc14x_x64.dll | 13/04/2021 13:07 | Application exten... | 92 KB |
| wxmsw315u_html_vc14x_x64.dll | 13/04/2021 13:05 | Application exten... | 764 KB |
| wxmsw315u_media_vc14x_x64.dll | 13/04/2021 13:04 | Application exten... | 127 KB |
| wxmsw315u_propgrid_vc14x_x64.dll | 13/04/2021 13:06 | Application exten... | 860 KB |
| wxmsw315u_qa_vc14x_x64.dll | 13/04/2021 13:05 | Application exten... | 174 KB |
| wxmsw315u_ribbon_vc14x_x64.dll | 13/04/2021 13:06 | Application exten... | 426 KB |
| wxmsw315u_richtext_vc14x_x64.dll | 13/04/2021 13:07 | Application exten... | 1,908 KB |
| wxmsw315u_stc_vc14x_x64.dll | 13/04/2021 13:07 | Application exten... | 1,543 KB |
| wxmsw315u_webview_vc14x_x64.dll | 13/04/2021 13:05 | Application exten... | 169 KB |
| wxmsw315u_xrc_vc14x_x64.dll | 13/04/2021 13:06 | Application exten... | 948 KB |

Note: Release DLLs location

wxMSW-3.2.2_vc14x_x64_ReleaseDLL.7z
wxMSW-3.2.2_vc14x_x64_ReleasePDB.7z

- Debug

| | | | |
|-----------------------------------|------------------|----------------------|-----------|
| wxbase315ud_net_vc14x_x64.dll | 13/04/2021 13:11 | Application exten... | 487 KB |
| wxbase315ud_vc14x_x64.dll | 13/04/2021 13:11 | Application exten... | 4,522 KB |
| wxbase315ud_xml_vc14x_x64.dll | 13/04/2021 13:15 | Application exten... | 396 KB |
| wxmsw315ud_adv_vc14x_x64.dll | 13/04/2021 13:14 | Application exten... | 39 KB |
| wxmsw315ud_aui_vc14x_x64.dll | 13/04/2021 13:16 | Application exten... | 1,159 KB |
| wxmsw315ud_core_vc14x_x64.dll | 13/04/2021 13:14 | Application exten... | 14,975 KB |
| wxmsw315ud_gl_vc14x_x64.dll | 13/04/2021 13:17 | Application exten... | 173 KB |
| wxmsw315ud_html_vc14x_x64.dll | 13/04/2021 13:15 | Application exten... | 1,291 KB |
| wxmsw315ud_media_vc14x_x64.dll | 13/04/2021 13:14 | Application exten... | 236 KB |
| wxmsw315ud_propgrid_vc14x_x64.dll | 13/04/2021 13:16 | Application exten... | 1,429 KB |
| wxmsw315ud_qa_vc14x_x64.dll | 13/04/2021 13:15 | Application exten... | 282 KB |
| wxmsw315ud_ribbon_vc14x_x64.dll | 13/04/2021 13:16 | Application exten... | 748 KB |
| wxmsw315ud_richtext_vc14x_x64.dll | 13/04/2021 13:16 | Application exten... | 3,231 KB |
| wxmsw315ud_stc_vc14x_x64.dll | 13/04/2021 13:16 | Application exten... | 3,885 KB |
| wxmsw315ud_webview_vc14x_x64.dll | 13/04/2021 13:15 | Application exten... | 351 KB |
| wxmsw315ud_xrc_vc14x_x64.dll | 13/04/2021 13:16 | Application exten... | 1,469 KB |

Note: Debug Dll location :

```
wxMSW-3.2.2_vc14x_x64_Dev.7z\lib\vc14x_x64_dll\
```

3. Programming notes

You need not to define a main/Winmain function. A system of macros generates the necessary function.

The macro `wxIMPLEMENT_APP` should be called only once with the derived App class for your application.

```
// Use this macro exactly once, the argument is the name of the wxApp-derived
// class which is the class of your application.
#define wxIMPLEMENT_APP(appname)          \
    wxIMPLEMENT_WX_THEME_SUPPORT          \
    wxIMPLEMENT_APP_NO_THEMES(appname)
```